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ABSTRACT

A comparison of the vocational education and training (VET) offered in Japan, the Federal Republic of Germany, and the United States revealed that programs in all three nations emphasized the following aims: competence at work, commitment of all to achieve excellence, and capacity to contribute to change. Organizations in all three nations were increasingly looking for, and prepared to help develop, people with the ability to use acquired knowledge and skills effectively in changing circumstances and in an integrated system. Although the United States appeared to be well tuned to a climate of moderate change, it appeared much less reflective about the future and appeared to lack an educational strategy, especially at the secondary level. Germany had systems that work well and in a stable environment; however, change appeared to be slow. Although Japan's VET strategies have given the country a highly educated working population, the downside of its success in corporate organization and individual service for the greater good is probably an underdevelopment in the kind of creativity that flourishes with wayward individual opportunities. Great Britain's imperial past, on the other hand, appears to continue to hamper the country's progress in the area of VET. (MN)

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Four National Training Systems Compared: Achievements and Issues

Chris Hayes

Occasional Paper No. 114

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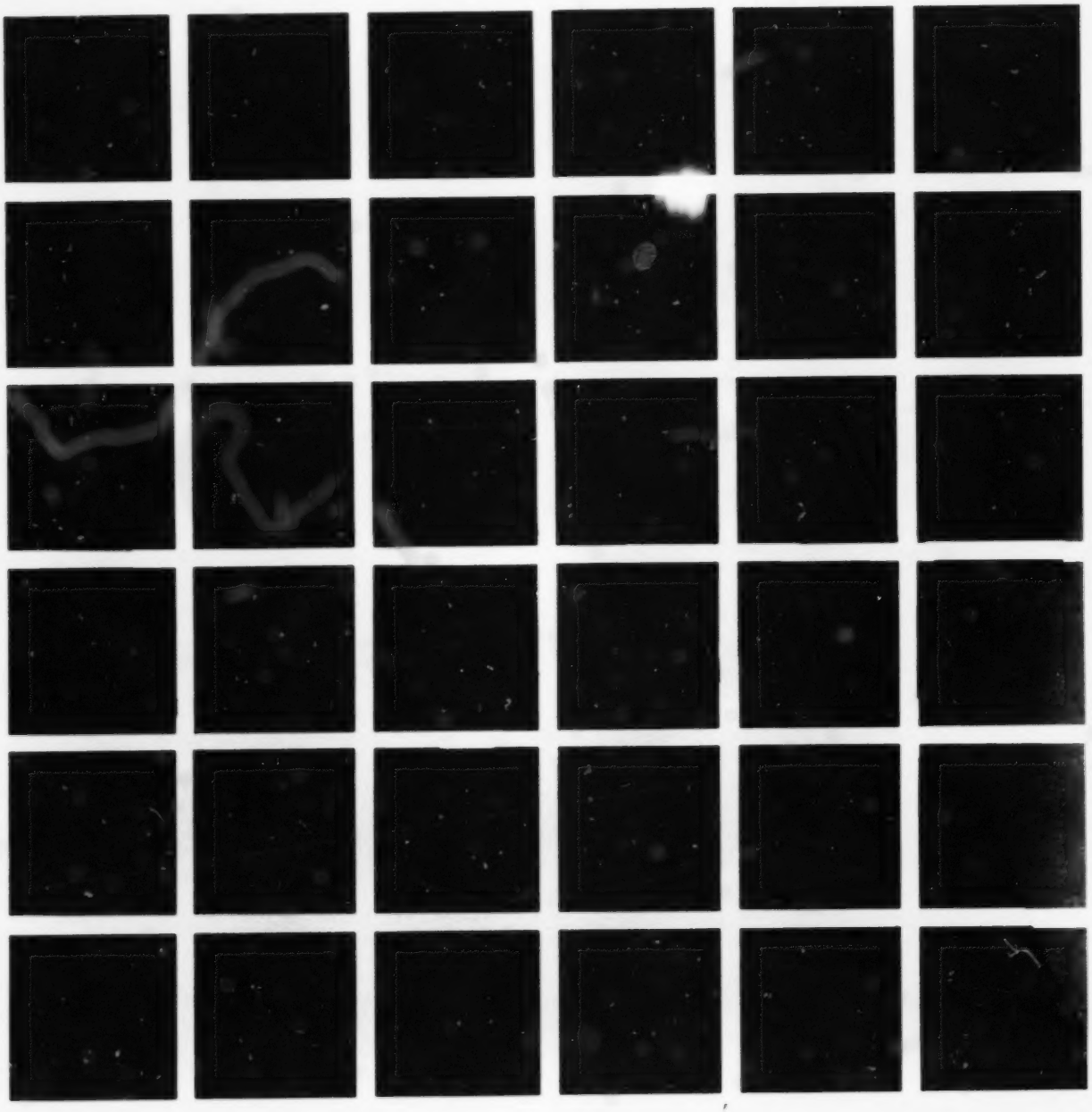

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Occasional Paper No. 114

FOUR NATIONAL TRAINING SYSTEMS COMPARED: ACHIEVEMENTS AND ISSUES

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1986

FOREWORD

In these times of rapidly changing economic conditions on the world scene (dizzying inflation, varying exchange rates, gross imbalances of trade, insurmountable foreign debts, huge budget deficits, severe unemployment), education and preparation for work are considered crucial around the world. Historically, different countries have conceived of the training enterprise in different ways, and within our own individual nations, we are constantly seeking ways to improve our occupational training systems. Some countries take a highly centralized approach to job preparation, whereas others, like the United States, lack a coherent, explicit policy and are characterized by a multiple delivery system. In any case, it is always enlightening to consider other approaches and to learn how different countries underpin their economic competitiveness through education and training.

Chris Hayes brings a broad and varied background to this consideration of four national training systems. A mathematical physicist educated in several countries, he has taught at Birmingham University and in the steel industry and has served as Director of the Foundry Industry Training Committee. He has been Deputy Chief Executive of the Manpower Services Commission responsible for training in industry, United Kingdom representative to the European Community Vocational Training Advisory Committee, and consultant to the Organization for Economic Cooperation and Development in Paris. His publications treat topics ranging from microelectronics and vocational training in the European community to a study on competence and competition for the National Economic Development Council in Great Britain.

On behalf of The Ohio State University and the National Center for Research in Vocational Education, I am pleased to present this seminar address by Chris Hayes.

Robert E. Taylor
Executive Director
The National Center for REsearch
in Vocational Education

FOUR NATIONAL TRAINING SYSTEMS COMPARED: ACHIEVEMENTS AND ISSUES

In a world of turbulence and uncertainty, three of the advanced industrial countries came through the recession better than the others: the Federal Republic of Germany, the United States of America, and Japan. The reasons for this achievement have been widely explored, sometimes in a broadly political way, sometimes from the point of view of research and innovation, sometimes by comparing fiscal, investment, or marketing strategies. In a world of fierce competition, the search for the "secret" ingredients that make for successful companies and, by extension, a successful country has caught the attention and imagination of people the world over. The worldwide popularity of *In Search of Excellence* reflects this interest, as does the never-ending stream of reports about Japan.

It is becoming clearer that in the transition from a society driven by the concepts of manufacturing industry to one dominated by the flow of information, those who are successful are moving the development of human resources from the periphery of business concerns to the heart of the organization. This emphasis is true for the private and also for the public sectors.

In December 1983, I was asked by the director general of the National Economic Development Council (NEDC) and the director of the Manpower Services Commission (MSC) to prepare a report about Germany, the United States, and Japan. (Both sponsoring organizations are tripartite.) The NEDC consists of cabinet ministers and the representatives of the employer and trade union organizations at the highest level. The MSC consists of employers, trade unions, local authorities, and members of the education service. The novelty of our brief was determined by the purpose of the exercise.

Terms of Reference

My two colleagues and I, all associate fellows of the Institute of Manpower Studies at the University of Sussex, were asked to visit the three countries in order to find out whether vocational training and education (VET) had, in their perceptions, contributed to their economic performance. Assuming a positive answer, we were to find out why they thought so, what resources and methods they employed, and what changes they were making now, or thinking of making in the future. In our report, we were to address the British government, the local government, employers and trade unions, and education services at the secondary and postsecondary levels. We were asked to say what we thought we needed to do in Britain in order to be able to play in the same VET league as our competitors.

Our brief meant that we did not go out with a framework of questions into which our respondents would have to fit their answers so that we could produce a truly comparative study, nor did we seek statistical data that were strictly compatible and that could be used for such a purpose. In one sense, such an approach made our task easier. We could look at whole systems rather than parts, and we were able to listen to the evidence in the way different people in widely different cultures wanted to tell it themselves. The perceptions of people inside national cultures and systems are

very different from those who are looking in from the outside. (As an aside, it was this very fact which made it so hard for us to treat Great Britain in the same way as we had treated the other countries; for the same reason, some American readers found our account of the United States too uncritical.)

At the same time, this approach obliged us to see the preoccupations of the different interest groups concerned with VET in each of the three countries through their own eyes, understand what was important to them, and grasp their priorities and concerns for the future. As a result, we had three stories to tell in explaining the traditions of VET in the different cultures, how VET was "positioning itself" in the changing national and international environments, and how its relation to economic performance was perceived.

You may well ask how such diverse accounts could be useful to us in Britain. We believe, as a result of our work, that successful economic performance is reflected in similar outcomes in quality and quantity. We found it possible to pass a message to our own country along the following lines: Britain was once in the "first division" of industrial nations. If we want to play there again, at least as far as VET is concerned, we need to achieve a number of outcomes such as are achieved in the three countries studied. Focusing on outcomes is never easy in Britain, but it is even more difficult in the case of educators and trainers, who are, by virtue of their trade, fascinated by processes—by those they practice themselves and by what they see practiced by others.

We therefore considered it part of our task to persuade policymakers in Britain that in aiming to match the outcomes of our competitors, our inputs and processes would in all likelihood be as different from those of any one of the three countries as each one of them is different from the others. Motivation and methods that produce good results in Japan, for example, cannot be mechanically transplanted elsewhere. They are likely to wither in any alien environment and culture unless special steps are taken to allow them to survive. It is like transplanting an organ from one living organism to another; it can be done, but very special care and planning are necessary to make it successful.

More specifically, some excellent American practices that, because of our common language and many shared values, look very inviting and ready-made for copying are nevertheless proving very difficult to transplant.

Some Conclusions

Before coming to the main part of this paper, you may be interested to hear a very brief summary of our main conclusions.

We did not set out to prove or disprove a direct and causal connection between corporate or public investment in VET and economic success. The general perception in successful organizations everywhere is that VET does not itself ensure economic success, but equally widespread is the belief that investment in VET is one of the indispensable ingredients for any organization, at the level of a country as a whole, the level of the organization, and also the level of the individual. There is nothing new in this finding except for the urgency and degree of importance that is turning an axiom into a powerful lever for action. Business leaders, politicians, public servants, researchers, and ordinary men and women believe that the rate of change, the penetration of microelectronic technology (MET), fierce international competition, and the general climate of instability and uncertainty impose demanding patterns of behavior on many more companies than

in the past and demand of individuals a far greater competence to position themselves in insecure labour markets. More specifically, these requirements were expressed in terms of the following three themes.

Competence, Commitment, and Capacity for Change

The following three arguments were articulated:

- The same technology is now available worldwide, as is illustrated by the rise of Taiwan, South Korea, Hong Kong, and others. As a German employer said to us, "The same machines and equipment can be bought by anyone; success in the market goes to those who have a work force that can use them to the best advantage." The truth of this statement was brought home to us in a recent comparison of productivity in comparable German and British engineering plants making simple, basic products like nuts and bolts. The main reason for higher German productivity was found to be greater competence in exploiting the opportunities offered by the equipment, made possible by greater technical knowledge and more highly developed skills.

  It should be noted that the term "competence" is used differently here from common American usage. It is meant to signify the capacity to use knowledge and skills effectively in the work place over a period of time in order to achieve some desired results.

- Two of the criteria for success in the marketplace have acquired critical importance in the 1980s: product quality and closeness to the customer. Largely as a result of Japanese competition, it has become much clearer to those who manage organizations that these two aims cannot be achieved without the competence and commitment of the whole work force. This truth is relentlessly pursued in the large Japanese corporations. Quality circles and, more recently, "Zero Defect Groups" are the two most widely known manifestations of this drive for perfection, perhaps because they can be most easily grasped in structural and organizational terms. But the whole culture and work organization are directed to this goal.

  The approach was very concisely summarized by Mr. Matsushita, whose company, the world's third largest electronics firm, is now making a strategic shift away from consumer to industrial products:

  > The intelligence of a handful of technocrats, however brilliant . . . is no longer enough. Only by drawing on the brainpower of all its employees can a firm face up to the turbulence and constraints of today's environment. This is why our large companies give their employees three to four times more training than yours; this is why they foster within the firm such intensive exchange and communication; this is why they seek constantly everybody's suggestions and why they demand from the educational system increasing numbers of graduates as well as bright and well educated generalists. . . . (in a letter to visiting American managers from K. Matsushita, Matsushita Electric Company)

  The message is clear. Perfection cannot be achieved unless we can enlist, foster, and promote the commitment, ingenuity, and innovative ability of all in the organization that includes those on the shopfloor, and in the office or serving the customer. Such employees know aspects of the process that supervisors, managers, technicians, or

designers can only know about but cannot properly master because they lack the real life experience.

There are hardly any private companies or public organizations in Britain that have even tried to ensure, much less succeeded in ensuring competence and in gaining the commitment of their work force to this extent. Hitachi's 4.2 million suggestions in one year are clear evidence.

- The third argument relates to the increasingly rapid changes in markets, customer preferences, product renewal cycles, and the penetration of MET, which are to be found more and more widely and not only in industries and services that are at the leading edge of advanced technology. Such changes, perhaps expressed in political or public awareness terms, also affect many public services, including those concerned with various forms of education. To stay competitive or to retain public confidence, more and more organizations have to develop a capacity for more frequent and, in many cases, more profound changes than in the past. To be able to do this effectively, organizations depend increasingly on women and men who, in the words of the Director of Human Resource Development of an American company, "have the habit of learning, the skills of learning, and the desire to learn."

  To have a work force with the capacity to contribute to change has become a business objective. We spoke to companies in all three countries that devoted substantial financial and other resources to translate the aim into reality. One of the German companies encouraged any form of continuous learning, whether directly relevant to company business or not, because "People who like learning are also more likely to embrace innovation and change."

Naturally, the extent to which these three objectives were achieved varied considerably, but there was no mistaking the seriousness of the emphasis on the following three aims:

- Competence at work
- Commitment of all to achieve excellence
- Capacity to contribute to change

To put it in organizational terms, considering people as a resource was becoming a preeminent concern of corporate management. Once a platitude that sounded good in the annual company report, the concern is now a live and continuing preoccupation.

Emerging Competences

At a more detailed level, organizations were increasingly looking for, and prepared to help develop, people with a number of key competencies. They wanted men and women who were able to—

- use acquired knowledge and skills effectively in changing circumstances,
- perform multitask operations,

- cross occupational boundaries and work in multioccupational teams,
- act in and take part in the management of an integrated system,
- diagnose relevant problems and take action,
- find out what knowledge and skills are needed to cope with unfamiliar situations,
- take an active part in a continuous process of improvement of product or service.

Some Comparisons

I would like to make some comparisons under a number of headings. They are not comparisons of the education and training systems with descriptions of the organization, structure, intake, thoughtput, and other features of this kind. Instead, they aim to offer some insights into why VET in each country is developing in particular ways and what the expectations, attitudes, and values are that underlie the actions in the different cultures. Such an analysis inevitably stresses the differences and refers to occasional similarities. It does not easily account for the fact that the desired outcomes of VET may be very similar because they are overwhelmingly influenced by an environment that is the same competitive world market and by a similar level of industrial development.

I have chosen seven characteristics that illuminate the role played by VET in Germany, Japan, the United States, and Britain. The seven categories are as follows:

- Shared general beliefs; often unconsciously held, that find expression in the way most people expect things to get done. Getting things done in Saudi Arabia, Nigeria, or virtually any other country than one's own throws these differences into stark relief.
- Shared views about goals related to VET—certain explicit or unspoken assumptions about aims, attitudes, and beliefs that exert an important influence on VET.
- Shared beliefs about achieving VET goals and preferred ways for coping with what needs to be done.
- Goals perceived to be important for VET.
- Key VET inputs. The differences are more telling here than the similarities.
- Benefits of successful VET and characteristic value judgments in each country.
- Continuous learning—the reasons for fostering continuing employee learning (e.g., the "learning company").

The Federal Republic of Germany

Shared general beliefs:	A stable and well-ordered society committed to national success.

Shared views about goals related to VET:	Quality in all products a matter of pride; competent people make the difference.
Shared beliefs about achieving VET aims:	Consensus of employers, trade unions, state and federal government; clear responsibilities; long-term planning.
Goals specific to VET:	All entrants to the labour market should be occupationally qualified.
Key VET inputs:	VET is more than acquisition of knowledge and skills; socialization at work is important.
Benefits of successful VET:	"Overtraining" offers greatest benefits to the nation, the company and the individual; it is the foundation for flexibiilty.
Continuous learning:	The only way to remain at the "leading edge."

Japan

Shared general beliefs:	Everyone has a place in collective success.
Shared views about goals related to VET:	Perfectionism in product performance through group activity.
Shared beliefs about achieving VET aims:	Consensus with clear responsibilities, long-term strategic research, development, and detailed planning.
Goals specific to VET:	A highly educated nation; lifelong training and continuing education.
Key VET inputs:	General education up to age 19 aiming at the "whole person"; "blank sheets" for in-house training.
Benefits of successful VET:	In-company mobility rests on "overtraining."
Continuous learning:	The natural way of life.

United States of America (offered to this audience with trepidation)

Shared general beliefs:	Still the land of opportunity and mobility; a dash of the frontier spirit.
Shared views about goals related to VET:	Commitment to being #1; "the market is the master."

Shared beliefs about achieving VET aims:	Fast response to events and challenges (e.g., Sputnik, Japan).
Goals specific to VET:	All citizens should be able to look after themselves and be productive in the labour market.
Key VET inputs:	Broad curricula, great diversity.
Benefits of successful VET:	"If you want to earn more dollars, you got to go back to school."
Continuous learning:	Now the only way to be and remain #1; and see off the competition.

Great Britain

Shared general beliefs:	Pragmatism; muddling through.
Shared views about goals related to VET:	Scientific innovation by the most able; others act as instructed.
Shared beliefs about achieving VET aims:	Autonomy in a hierarchical structure.
Goals specific to VET:	Certification of the most able; overcoming skill shortages.
Key VET inputs:	High quality, highly specific technical knowledge and skills.
Benefits of successful VET:	Employee competent to carry out tasks; individuals progress in education.
Continuous learning:	To follow when tasks have changed.

Even if we were not discerning enough to grasp the most significant characteristic of one or the other category correctly, these comparisons show the great diversity of perceptions. This diversity can be seen reflected in motivations for and timing of major actions, as well as in the language used for policy changes at national and corporate levels.

Here's an example from Britain. Until the advent of high youth unemployment, virtually the only occasions on which there was a national and company climate favorable to the development of VET were periods of skill shortages or labour shortages during the upswings of economic cycles. Just now we are spurred into action by a shortage of electrical and electronics university graduates. Youth unemployment has added a new dimension. It is indirectly the cause of one of the most drastic changes in attitudes toward VET to be experienced in Britain since the 1930s. We are in the process of introducing a 2-year youth training scheme for those who leave secondary school at the minimum age of 16. The scheme will be available to all and cover all sectors of the economy. It will be based on systematic learning at work and on training and education on and off the job, and there will be a recognized "vocational qualification" at the end of it. If carried out successfully, it will bring us nearer to German aims by ensuring that nobody enters the labour market at 18 without minimum job competency.

Three Distinguishing Issues

Looking at the similarities and differences of the four countries, and with their distinctive flavor freshly in mind, we can look at three issues that have an important bearing on the effectiveness of the contribution VET can make to economic and personal success. Looking to the future, we find they also throw light on the support VET can lend to the efforts in all countries to stay competitive and to provide employment. The issues are not new, but I believe they have acquired a new significance in this period of transition from one historic era to another. They concern, first, whether employees are seen primarily as technical doers or as creative contributors to the organization; second, whether VET is seen primarily as a means of personal empowering or of meeting corporate needs; and third, whether VET adopts a reactive or proactive posture in the face of the fast-changing environment.

Technical Doers or Creative Contributors

At the extreme, there are two models for VET. One relies on an analysis of work processes and uses the results to train people to carry out instructions correctly. If the work process changed, a new training programme was devised and implemented. The approach is labelled in the world of British education as "instrumental." It is meant to be a derogatory term, expressing disapproval and disdain. The approach was nevertheless effective in certain manufacturing processes and was widely used. It survives in the minds of many training designers in spite of the drastic change in the environment that is rendering it obsolete. I believe that the move toward systems-based work processes, whether in manufacturing or service industries, makes this form of training not cost-effective. It also fails to take into account that the rate of change makes such a version of continuous retraining not only expensive but always lagging behind. Perhaps even more important, it does not acknowledge that people at all levels are increasingly faced with unfamiliar circumstances in work situations. Purely procedural training disables them and makes them ineffective.

At the other extreme, people are not only trained to become technically skilled but to have experience in a variety of related situations, without being separately instructed in each one. In

other words, they have to use their knowledge and skills competently and redeploy them in situations that are different from those in which they have been acquired. Such people are more likely to cope with change because they have gained the confidence of successful redeployment as part of the education and training process. The penetration of new technology enhances the value of people trained and educated in this way. There is yet another reason why training of this type scores even higher. Quality of product or service and closeness to the customer become preoccupations of more and more businesses and public organizations. I have already drawn attention to the need for a creative contribution from all employees if those two outcomes are to be continuously improved. People trained by rote to carry out procedures accurately, and to do no more and no less, are unlikely to be well motivated or able to make such a creative contribution.

The VET traditions of some countries turn out to be a great advantage in this situation. Germany, for instance, has kept training outcomes and immediate job requirements sufficiently distant from each other to preserve something not too far away from the medieval apprenticeship system. Young people are considerably overtrained by standards that relate solely to "technical doing." A 3-year apprenticeship for salespersons in the retail trade looks vastly excessive to traditional British eyes. (It does also to some German eyes, but that does not weaken the essential argument.) In my own view, this precious German tradition will help to minimize the consequences of the slow speed with which their VET system reacts to important environmental changes in technology, organization, and markets.

Japan also bears the hallmark of a supply-managed VET system, rather than one often dominated by short-term demand considerations. However, their organization of work and of training in the trendsetting large companies makes for faster adaptation to change than is possible in Germany.

The messages from the United States are so diverse that I find it difficult to discern clear trends. It would be surprising if the home of "Taylorism" were to change overnight from often narrowly determined, demand-led training programmes to anything resembling those of Germany or Japan. Americans also have the reputation for acting fast. In any case, you have a helpful tradition of broadly based education programmes that have always contributed to the flexibility and adaptation of your work force.

In Britain, we have largely failed to preserve the advantages of the old apprenticeship tradition. Much of our training is procedural, except for the elite or the very bright. The good news is that we are waking up to the consequences of our VET policies and there is widespread understanding now of the need for change.

Personal Empowering or Corporate Needs

Colleges and schools of vocational education are used to two kinds of clients. Exaggerating for effect what in real life is much less clearly differentiated, it can be said that there are some events that educational institutions have specifically designed to empower individuals to know more about certain things, to be able to perform better, or to be able to do altogether new things. Such learning opportunities can help some people obtain a job, keep a job, earn promotion or more money, gain more power and influence, help others more effectively, play a greater role in the community, and a thousand other things. The primary objective is to empower individuals so that they can play a more effective role, whether in paid employment or in some other work, and also to enhance their potential, and the satisfaction they may derive from all kinds of pursuits. If an employer benefits from the additional competence his employees have gained through their learning efforts, that is a welcome, but secondary, by-product.

At the other extreme is the college's corporate client. An automobile manufacturer may want a number of community colleges to train his or her local agents in the repair and maintenance of vehicles, or a state might want to offer to any employer who will provide new employment a custom-built programme to make the work force effective on "day one." In this case, VET is clearly linked with the performance of the company. If the organization thinks short-term and is motivated by a simple reaction to events, the VET demanded and provided will be narrowly focused. Such companies want people who have the skills and knowledge to carry out instructions correctly and are trained accordingly. This will be especially the case with any training the company organizes itself. If the individual benefits from the additional competence gained in this learning process, that is a welcome, but secondary, by-product.

There are many reasons why reality is usually somewhere in the grey area between these black and white extremes. My purpose in describing them, nonetheless, in this way is to show why some countries are better placed, and some worse, when their traditional preferences are challenged by the imperatives of our time.

Just now and probably for some time to come, competitive success will go to those organizations that pursue a policy of strategic human resource development. They will want their employees to develop learning skills, the ability to contribute to innovation (for instance, in achieving a better quality product or service) and the ability to cope successfully with unfamiliar situations. This policy offers the best response to uncertainty, rapid technological development, the internationalization of production and services, and frequent changes in markets and the political environment. As for individuals in the western economies, they will need to position themselves in volatile labour markets, keep up to date, learn new skills, and develop the confidence to deal with unfamiliar circumstances.

The situation in Japan, or, more accurately, in the trendsetting large Japanese companies seems clear. VET must in the first instance serve corporate objectives. Companies provide extensive and expensive VET provisions to ensure that their employees are fully competent and able to play their part in development activities. In addition, individuals are expected to invest time and money to continue with their own learning in order to reinforce their contribution to the enterprise. The corporate benefit reigns supreme.

The German system is also heavily biased toward corporate needs. The content and teaching methods in the all-pervasive apprenticeship provision are largely determined by employer needs. Continuing adult learning is also to a large extent sponsored by employers. This is not to say, however, that it is narrow in concept. Among the many reasons that can help to explain the German tradition, two are perhaps relevant here. First, there is the notion that what is good for German employers as a whole is good for Germany. Employers speak after due deliberation, nationally, through their appointed organizations. Secondly, there is the tradition of arriving, after much bargaining, at a national consensus that includes the trade unions and the education services. Corporate needs are, as a consequence, much less linked with individual enterprises than appears at a first glance.

Circumstances in the United States are much less clear. The tradition of taking responsibility for one's own progress is strong. Moving from one employer to another is an important part of making one's way. Going back to school to earn more dollars is a recognized motivation for learning. Hence, it is probably fair to say that individual benefit is the primary motor for VET. However, many of the larger employers provide and support VET to promote corporate aims. They also understand that the offer of learning opportunities is important for attracting and keeping good people. Corporate and individual benefits are in a dynamic equilibrium that, in the past, has changed with economic cycles and labour market conditions.

In Britain, it is only since the last world war that qualified young men and, more recently, young women from middle-class homes have entered industry and commerce in any significant numbers. Before the war, most managers were self-made, coming from largely working-class backgrounds with educational opportunities severely circumscribed by the need to bring money into the home as early as possible. For the ambitious and intelligent, apprenticeship with night school study was the way up. It was entirely up to them. The VET system was there to serve their needs. It was staffed by men of the same kind who mostly taught part-time. With greater access to education since the war, that tradition has been almost completely lost in the 1960s and '70s. The learning energy of individuals has been absorbed in adult education classes of great variety but hardly linked with vocational needs. Adults continue to learn for their nonemployment interests; VET itself serves much more direct company corporate needs.

Proactive or Reactive VET

VET policies and actions reflect the posture adopted by an organization or, by extension, a state or country. One can usefully distinguish four postures:

- Proactive
- Reactive
- Retrenching
- Resigning

Proactive organizations think long-term and aim at diversity, richness, and variety. They systematically and consciously scan their environment in order to sense trends in their early stages. They prefer structures that can adapt on a biological model. They aim to influence the environment in which they operate.

Reactive organizations think short-term and aim at purposeful and immediately effective responses to events. They are greatly concerned with structures. They react but do not set out deliberately to influence their environment.

Retrenching organizations look at their environment, react to those aspects of it they understand and with which they can cope. They avoid other aspects that would force them to make changes. They find it difficult to live in a fast-changing world.

Finally, there are the organizations that just give up. A company may go bankrupt because there is no demand for their product, or a college may lose support for courses that are out-of-date. Such organizations have altogether lost the ability to adapt to change.

If one is to use this classification with whole countries, one is bound to make generalizations that cannot be sustained in detail. Moreover, organizations—and countries—often act differently at a strategic level than an operational level.

Using the United States as an example, one might say that it is proactive operationally. It is used to responding rapidly to market changes; it uses lots of resources (including money); it has

great diversity and an extensive system for providing data and information. On the other hand, the United States can be described as reactive at the strategic level. It makes no long-term federal VET plans. However, on our visit last year we, thought that we noted the beginnings of proactive views in VET matters at state level.

Germany has long taken a proactive view of medium-term VET needs but seems to be so preoccupied with its structure that it is at best reactive in operational terms.

Japan is the country of long-term thinking and planning par excellence. It is proactive at both the strategic and operational levels. It scans the environment through a chain of research institutes that descend in scope from the very long-term to the more immediate and practical. The outcome is a concern with human resources on a scale hardly matched elsewhere.

Britain has been retrenching at the strategic level. Until very recently, our VET provision did not take adequate account of the far-reaching changes in the needs of organizations and individuals. The scale of effort and investment betrayed a highly limited view of what is going on in the world around us. At the operational level, Britain can be described as reactive. Fortunately, we are witnessing a change for the better. What will be critical for us is the speed with which we can now move.

Strengths and Weaknesses

Turbulence and uncertainty are putting all VET systems under great stress. The traditions and attitudes in the different countries are more or less helpful in overcoming constraints and using opportunities. The current and anticipated environmental context is turning national features and characteristics into strengths and weaknesses.

The United States appears to be well tuned to a climate of moderate change, able to react fast and with vigor, but much less reflective about the future. Such a vast and rich country can afford relative inefficiency and to throw money at problems. The absence of an educational strategy, as against a market response, can perhaps be most clearly seen in its secondary education, a subject of much agonizing reappraisal.

Germany has systems that work well in a stable environment. Its long-established concerns with quality and competence have been of great service to that country. The system has also been strong enough to withstand the strains of the extra large number of young people who are searching for training places. On the other hand, change is slowly achieved. Employers and unions in the engineering industry have taken some 15 years to conclude new agreements about changes in apprentice training. New technologies have to be very extensively used before they can be absorbed into the official training programmes.

Japan seems to be well adapted to turbulence with long-term strategic plans and also with an ability to react quickly to change. Its drive for perfection and concern for detail has brought rich rewards. Its education and VET strategies have now given the country a highly educated working population. The obverse of this success in corporate organization and individual service for the greater good is probably an underdevelopment in the kind of creativity that flourishes with wayward individual opportunities.

Britain's imperial past continues to hamper its current progress. Many people have been secretly hoping that unpleasant changes will go away or that actions which were successful in the

past would prove to be equally useful in the present. Our attention to the brightest at school and our veneration of "pure" subjects in the education system have helped to produce lots of Nobel Prize winners but few who can turn invention into practical hardware. Some of the strength of our traditions can, however, be seen in the current rapid generation of small businesses and fast-growing community undertakings.

What will the future hold for all of us at a time when the half-life of new developments in information technology is 2.7 years? What kind of work will we be doing 10 years from now? We certainly live in exciting times. My crystal ball was too heavy to take across the Atlantic, and without it I cannot tell you what will happen in the future.

QUESTIONS AND ANSWERS

Chris Hayes

Question: The chairperson of Britain's Manpower Services Commission, David Young, is quoted as saying one reason that the United Kingdom productivity has slipped and its unemployment among youth has increased is because in 1964 vocational education was eliminated from the public education system. Is this an accurate quote? Do you agree with it?

I have not heard the quote; however, in 1964, Parliament passed the Education and Training Act under which 24 Industrial Training Boards were set up, covering most sectors of industry and commerce. Each board was composed of employers, trade unions, and educators who were to improve the education and training standards in its industrial sector and design and operate a levy/grant financing system. I expect Lord Young would disapprove of that system because it requires individual enterprises to reach national training standards and undertake sufficient training for their needs. He is likely to believe that companies should train or not train workers as they wish. If companies don't train, they'll perform poorly; if they do train, they'll perform well.

Question: What should the research agenda be for the National Center for Research in Vocational Education?

This is a question on which one would like to reflect before replying. It is, of course, impossible to give a proper answer in the space of a few minutes. I would like to focus only on one aspect.

My understanding of R & D work in our field in the United States indicates that it is difficult to find resources for work with a longer time horizon. Policymakers in the public sector do not seem to attach great importance to the kind of human resource development strategies that have proved so successful in other countries. At a time of severe international competition, countries like Japan and Germany can rely on a broad base of competence nurtured by research and development work with long perspectives. Quick response, one of the things the United States is so good at, is necessary but no longer sufficient to do well in the international stakes.

I would therefore hope that an important item on your research agenda should be strategic long-term work to help give the United States the vocational education and training infrastructure it needs now more than ever before.

Question: Where does the concept of a work ethic fit into your study?

The Protestant work ethic can be seen in many different ways. When *I* think about work ethic, I am reminded of past expectations: employee loyalty, attention to work, and completing a fair day's work for a fair day's pay. In my youth, these expectations were common but not so much now. Today, I see the same issue more in terms of commitment: commitment to people, to the employer, to the workplace, to different groups in society and the community, and to the opportunity of using

one's competence and ability. This is different from the traditional Protestant work ethic. British companies have encouraged workers to make this change. Those who rely on the old loyalty and Protestant work ethic are slowly being displaced. They were primarily to be found in the smokestack industries, many of which are in decline. In industries that are prospering, a different commitment is being asked for from workers. Suggestions, quality improvements and other forms of participation, for example, play an important part in the expression of commitment to the well-being of a company. The work ethic is changing; commitment is replacing acquiescence.

Question: How can a democracy agree on long-term goals?

The basic obstacle is that resources and strategic thinking and planning are usually determined by politicians with short terms of office. Let me bring the general question more into our field of work. We recently concluded a study about research and development in vocational education and training for Great Britain. In the final report, we made a recommendation that a national research institute should be set up. The funding for the institute should contain a percentage, perhaps a quarter, for work of a long-term strategic nature. This allocation should be untouchable and not subject to annual changes.

Turning to successful public and private organizations which are able to scan their environment systematically, we find a different approach. For example, IBM Europe executives, including those in human resources, meet monthly and report short-term, medium-term, and long-term effects of the environment on their business. This approach is also needed in public and research.

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